PROJECT EVALUATION

Method

Pre-Sign Installation Speed Sampling

We collected traffic speed data at several points along the main road through town before the signs were installed. We used a hand-held Bushnell Speed Radar Gun, Model 101911. Sampling periods were 1 or 1.5 hours long, during the first week of July 2017 and at the end of April /beginning of May 2018, immediately before the signs were installed. The data were combined into 3 groups according to the closest of the 3 sign sites, and having the same direction of traffic flow that is now monitored by the radar speed sign.

Radar Speed Sign Sampling

We used data collected and stored by the signs, after all the start-up problems were solved and after traffic volume began increasing with tourists. We downloaded data from each sign to a mobile device via the sign's Wi-Fi, and then transferred the data to a computer for analysis using Excel. We chose to analyze 2 weeks of data, June 17-23 and June 24-30. Data are downloaded from the signs in the form of daily reports (see example, Table 1), which we combined into weekly summaries for each site (see example, Table 2). Tables 3, 4, and 5 are data compilations for sites 1, 2, and 3 respectively.

Results

Pre-sign installation sampling was not as extensive as planned. Traffic volume was low, especially during the spring 2018 sampling just prior to the sign installation, and it was difficult to find volunteers for such a boring assignment. The spring sampling occurred when the only traffic of note was mineworkers heading to work in the morning and returning in evening; sampling targeted those time intervals. Data collected with the speed radar gun consists of only 1 data point for each vehicle: peak speed.

The radar signs also record peak speed for each vehicle. However, the daily data from the signs is summarized in half hour intervals, and only the peak speed for each half hour is displayed. In Tables 3 - 5 the radar gun peak speeds are reported by number of vehicles exceeding 20 mph by the amounts indicated (1-5 over; 6-10 over; etc.), but in the radar sign weekly summaries, peak speeds are reported by the number of half hour intervals where the peak speed fell into these categories (1-5 over, 6-10 over, etc.).

In addition to peak speed, the radar signs also calculate an average speed for each vehicle. Average speed is perhaps a more useful description of traffic flow, however we

have no pre-sign data with which to compare it. Weekly average speeds were 20 mph[1] or less at sign sites 2 and 3 during both of the weeks analyzed. At Site 2 the percent of speeders seems to have dropped substantially after the signs were installed (looking very broadly at the pre- and post- radar sign data). Site 1 registered weekly average speeds of 24 and 23 mph; this site is at the north end of town where traffic is slowing from a 35 mph zone to 20 mph.

Although the data collected for evaluation did not serve us very well, several residents have noticed and commented that traffic is generally going slower this summer than it has in past years. And perhaps this subjective observation is our best indicator of project success.

Our two portable signs are temporarily in use at the Fish Creek Wildlife Viewing Site, operated by the U.S. Forest Service, 3 miles north of town. Forest Service staff have not yet downloaded any data, but they report that most traffic is moving slower than in previous years.

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[1] 20 mph is the posted speed limit in Hyder

Table 1. Sample of daily data from radar sign

Period Statis	6/23/2018				Daily Statistics		
Time	# vehicles	#violators	sum of avg sp	peak speed	Avg counts	Peak counts	Summary
00:00	0	0	0	0	31	19	226
00:30	0	0	0	0	69	43	34
01:00	0	0	0	0	92	81	15.04
01:30	0	0	0	0	26	64	3630
02:00	0	0	0	0	6	13	36
02:30	0	0	0	0	1	5	20
03:00	0	0	0	0	1	0	24
03:30	0	0	0	0	0	1	
04:00	0	0	0	0	0	0	
04:30	0	0	0	0	0	0	
05:00	0	0	0	0	0	0	
05:30	0	0	0	0	0	0	
06:00	1	0	19	19			
06:30	0	0	0	0			
07:00	8	2	152	26			
07:30	9	1	146	22			
08:00	0	0	0	0			
08:30	4	0	73	19			
09:00	9	2	141	22			
09:30	6	0	95	20			
10:00	9	1	151	28			
10:30	6	1	99	23			
11:00	14	1	193	23			
11:30	11	1	174	22			
12:00	13	4	226	27			
12:30	14	0	193	20			
13:00	11	1	168	22			
13:30	11	2	168	27			
14:00	7	0	84	18			
14:30	7	0	99	19			
15:00	10	4	202	32			
15:30	15	2	216	36			
16:00	4	1	63	24			
16:30	5	1	91	24			
17:00	13	3	230	29			
17:30	9	1	142	22			
18:00	3	1	42	21			
18:30	0	0	0	0			
19:00	12	3	225	24			
19:30	12	2	188	22			
20:00	2	0	32	16			
20:30	0	0	0	0			
21:00	0	0	0	0			
21:30	0	0	0	0			
22:00	1	0	18	18			
22:30	0	0	0	0			
23:00	0	0	0	0			
23:30	0	0	0	0			

Table 1. Example of weekly summary of data from a radar sign

	SITE 1 WEEKLY SUMMARY JUNE 17 - JUNE 23					
Period begin	# vehicles	sum of avg speeds	avg speed	#violators	peak speed	%violators
00:00	0	0		0		
00:30	2	48	24.0	2	25	100.0
01:00	2	48	24.0	2	25	100.0
01:30	0	0		0		
02:00	0	0		0		
02:30	1	30	30.0	1	30	100.0
03:00	0	0		0		
03:30	0	0		0		
04:00	1	22	22.0	1	22	100.0
04:30	0	0		0		
05:00	4	103	25.8	4	33	100.0
05:30	41	924	22.5	28	41	68.3
06:00	5	127	25.4	4	33	80.0
06:30	2	52	26.0	2	29	100.0
07:00	15	355	23.7	9	38	60.0
07:30	20	507	25.4	17	38	85.0
08:00	13	269	20.7	8	29	61.5
08:30	19	450	23.7	11	41	57.9
09:00	29	680	23.4	20	41	69.0
09:30	28	686	24.5	22	39	78.6
10:00	32	783	24.5	25	40	78.1
10:30	28	696	24.9	18	40	64.3
11:00	29	712	24.6	19	40	65.5
11:30	36	797	22.1	23	31	63.9
12:00	28	752	26.9	22	42	78.6
12:30	74	1688	22.8	43	42	58.1
13:00	50	1163	23.3	36	41	72.0
13:30	41	903	22.0	21	33	51.2
14:00	70	1567	22.4	38	35	54.3
14:30	43	1020	23.7	29	46	67.4
15:00	50	1257	25.1	38	44	76.0
15:30	55	1380	25.1	41	41	74.5
16:00	61	1475	24.2	42	43	68.9
16:30	31	803	25.9	26	45	83.9
17:00	50	1243	24.9	41	43	82.0
17:30	81	1821	22.5	50	39	61.7
18:00	25	572	22.9	16	34	64.0
18:30	27	632	23.4	17	39	63.0
19:00	18	364	20.2	11	31	61.1
19:30	13	295	22.7	8	31	61.5
20:00	13	275	21.2	8	31	61.5
20:30	10	197	19.7	5	29	50.0
21:00	16	385	24.1	10	36	62.5
21:30	5	118	23.6	4	31	80.0
22:00	2	75	37.5	2	43	100.0
22:30	5	158	31.6	5	43	100.0
23:00	0	0		0		
23:30	2	62	31.0	2	35	100.0
TOTAL/AVG	1077	25494	24	731		68

Site1 Wk 1	# vehicles	1077
	avg speed	24
	% violators	68

peak speeds over 20 mph by daily half hour intervals

1-5 over	41
6-10 over	70
11-20 over	70
>20 over	16

197 half hour intervals with violators *

*336 total half hour intervals in a week

Table 3. Data compilation, Site 1

PRE-SIGN DATA

Sampling Info:

Date	Location	Travel Direction	Start Time	Stop Time	Interval	# Vehicles	Peak Speed
7/6/17	Hyder Ave & 9th St.	S	18:15	19:15	1 hr	24	33
4/27/18	Site 1	S	17:30	19:00	1.5 hr	9	46
5/4/18	Site 1	S	6:45	8:15	1.5 hr	12	37

SITE 1 SUMMARY		
# vehicles	45	
% violators*	78	
*based on peak speed		
peak speeds over 20 mph by vehicle count		
1-5 over	18	
6-10 over	8	
11-20 over	8	
<20 over	1	
	35	vehicles

RADAR SIGN DATA

JUNE 17-23		
# vehicles	1077	
avg speed	24	
% violators*	68	
*based on average speed		
peak speeds over 20 mph by half hour intervals		
1-5 over	41	
6-10 over	70	
11-20 over	70	
>20 over	16	
	197	half hour intervals
336 total half hour intervals in a week		

JUNE 24-30		
# vehicles	1039	
avg speed	23	
% violators*	63.5	
*based on average speed		
peak speeds over 20 mph by half hour intervals		
1-5 over	44	
6-10 over	65	
11-20 over	72	
>20 over	5	
	186	half hour intervals

Table 4. Data compilation, Site 2

PRE-SIGN DATA

Sampling Info:

Date	Location	Travel Direction	Start Time	Stop Time	Interval	# Vehicles	Peak Speed
7/3/17	Hyder Ave @ school	N	16:50	17:50	1 hr	16	34
4/30/18	Site 2	N	6:45	8:15	1.5 hr	11	33
5/2/18	Site 2	N	17:30	19:00	1.5 hr	13	30

SITE 2 SUMMARY	
# vehicles	40
% violators*	85
*based on peak speed	
peak speeds over 20 mph by vehicle count	
1-5 over	16
6-10 over	12
11-20 over	6
<20 over	0
	34 vehicles

RADAR SIGN DATA

JUNE 17 - 23	
# vehicles	1345
avg speed	17
% violators*	22
*based on average speed	
peak speeds over 20 mph by half hour intervals	
1-5 over	111
6-10 over	31
11-20 over	7
>20 over	0
	149 half hour intervals
336 total half hour intervals in a week	

JUNE 24 - 30	
# vehicles	1384
avg speed	16.8
% violators*	22.3
*based on average speed	
peak speeds over 20 mph by half hour intervals	
1-5 over	128
6-10 over	23
11-20 over	10
>20 over	0
	161 half hour intervals

Table 5. Data compilation, Site 3

PRE-SIGN DATA

Sampling Info:

Date	Location	Travel Direction	Start Time	Stop Time	Interval	# Vehicles	Peak Speed
7/3/17	Int'l Ave @ church	N	15:25	16:25	1 hr	33	33
7/8/17	Premier Ave & 4th St.	N	6:45	7:45	1 hr	42	28
5/8/2018(a)	Site 3	N	6:45	8:15	1.5 hr	16	28
5/8/2018(b)	Site 3	N	17:00	18:30	1.5 hr	18	27

SITE 3 SUMMARY		
# vehicles	109	
% violators*	74	
*based on peak speed		
peak speeds over 20 mph by vehicle count		
1-5 over	52	
6-10 over	26	
11-20 over	3	
<20 over	0	
	81	vehicles

RADAR SIGN DATA

JUNE 17 - 23		
# vehicles	1767	
avg speed	20	
% violators*	41	
*based on average speed		
peak speeds over 20 mph by half hour intervals		
1-5 over	66	
6-10 over	75	
11-20 over	39	
>20 over	7	
	187	half hour intervals
336 total half hour intervals in a week		

JUNE 24 - 30		
# vehicles	1887	
avg speed	19	
% violators*	37.1	
*based on average speed		
peak speeds over 20 mph by half hour intervals		
1-5 over	69	
6-10 over	75	
11-20 over	40	
>20 over	2	
	186	half hour intervals